

In The Claims:

1. (Currently Amended) A method for controlling blade tip clearances comprising the steps of:

(a) operating a turbine engine, the turbine engine having a compressor section, a combustor section and a turbine section, the turbine section including a rotor with discs on which a plurality of blades are attached;

(b) extracting a portion of the combustion gases from the combustor section of the turbine engine;

(c) combining the portion of combustion gases with a portion of the compressor exit air to form a mixture, wherein the temperature of the mixture is greater than the temperature of the compressor exit air as it exits the compressor section;

(d) monitoring at least one engine operating parameter; and

(e) selectively supplying the mixture to at least one stationary blade ring based on the at least one engine operating parameter, wherein at least a portion of the at least one blade ring is substantially proximate to the blades, wherein the temperature of the mixture is greater than the temperature of the at least one blade ring, wherein said mixture supplying is performed automatically by an engine controller,

whereby exposure to the mixture causes thermal expansion of the blade ring such that the clearance between the tips of the blades and a neighboring stationary blade ring increases.

2. (Original) The method of claim 1 wherein the combustor section includes a transition for ducting combustion gases from the combustor section to the turbine section, wherein the portion of combustion gases are extracted from the transition.

3. (Original) The method of claim 1 wherein the turbine include at least two rows of blades, wherein a first row of blades is located upstream of a second row of blades, the first row of blades being substantially proximate to a first blade ring and the second row of blades being substantially proximate to a second blade ring.

4. (Original) The method of claim 3 wherein the mixture is only supplied to the first blade ring.

5. (Previously presented) The method of claim 3 further comprising the step of:

(f) discharging the mixture from the at least one stationary blade ring into the turbine flow downstream of the first row of blades.

6. (Original) The method of claim 1 wherein steps (b), (c), and (e) occur during part load operation of the engine.

7. (Original) The method of claim 1 wherein steps (b), (c), and (e) occur during engine start up until the engine reaches from about 10% load to about 25% load.

8. (Previously presented) The method of claim 1 further comprising the step of:
(g) substantially ceasing steps (b), (c), and (e) when the engine reaches substantially steady state conditions and supplying only compressor exit air to the at least one blade ring.

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9. (Original) The method of claim 8 wherein substantially steady state conditions include base load operation.

10. (Previously presented) A turbine system comprising

a turbine engine having a compressor section, a combustor section, and a
10 turbine section, the turbine section including a plurality of discs mounted to a rotor, wherein a plurality of blades are attached to the discs and a stationary blade ring surrounds at least a portion of the blades;

a channel extending from the combustor to the blade ring, wherein the channel permits flow of a portion of combustion gases out of the combustor section, the channel
15 further including an inlet for permitting entry of a portion of compressor exit air such that the compressor exit air can mix with the combustion gases in the channel so as to cool the combustion gases;

a valve for selectively regulating the flow combustion gases into the channel; and

an engine controller operatively connected to the valve, wherein the engine controller automatically operates the valve,

whereby the clearance between the tips of the blades and the surrounding stationary blade ring increases upon exposure to the mixture of combustion gases and

5 compressor exit air

11. (Cancelled)

12. (Previously presented) The turbine system of claim 10 wherein the controller operates the valve so as to substantially restricts flow of combustion gases through the channel when the engine reaches substantially steady state operation.

10 13. (Original) The system of claim 12 wherein substantially steady state operation includes at least base load operation.

14. (Original) The turbine system of claim 10 wherein the blade ring includes an outlet for discharging the mixture of combustion gases and compressor exit air downstream of the first row of blades and into the turbine gas flow.

15. (Previously presented) A turbine system comprising

a turbine engine having a compressor section, a combustor section, and a turbine section, the turbine section including a plurality of discs mounted to a rotor, wherein a plurality of blades are attached to the discs and a stationary blade ring

5 surrounds at least a portion of the blades; and

a channel extending from the combustor to the blade ring, wherein the channel permits flow of a portion of combustion gases out of the combustor section, the channel further including an inlet for permitting entry of a portion of compressor exit air such that the compressor exit can mix with the combustion gases in the channel so as to cool the
10 combustion gases,

a manual-operable valve for selectively regulating the flow of combustion gases into the channel;

whereby the clearance between the tips of the blades and the surrounding stationary blade ring increases upon exposure to the mixture of combustion gases and
15 compressor exit air.

16 (Previously presented) The turbine systems of claim 10 wherein the blade ring includes an outlet for discharging the mixture of combustion gases and compressor exit air downstream of the first row of blades and into the turbine gas flow.

17 (Currently Amended) A method for controlling blade tip clearances comprising the steps of:

- (a) operating a turbine engine, the turbine engine having a compressor section, a combustor section and a turbine section, the turbine section including a rotor with discs on which a plurality of blades are attached;
- (b) extracting a portion of the combustion gases from the combustor section of the turbine engine;
- (c) combining the portion of combustion gases with a portion of the compressor exit air to form a mixture, wherein the temperature of the mixture is greater than the temperature of the compressor exit air as it exits the compressor section;
- (d) monitoring at least one engine operating parameter; and
- (e) selectively supplying the mixture to at least one stationary blade ring based on the at least one engine operating parameter, wherein at least a portion of the at least one blade ring is substantially proximate to the blades, wherein the temperature of the mixture is greater than the temperature of the at least one blade ring, wherein said mixture supplying is performed manually,

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whereby exposure to the mixture causes thermal expansion of the blade ring such that the clearance between the tips of the blades and a neighboring stationary blade ring increases.

5 Claim 18 (Canceled)